Memorandum – Part 2

span well over a mile, without a shred of record evidence to indicate that there is, in fact, any MTBE actually in the groundwater depicted by these hand-drawn plumes. *See Gerson Decl.*, Ex. C at fig. 3.

Figure 3 from Terry's original February 6, 2009 report (and found in subsequent reports) illustrates the speculative, unfounded basis of his Analysis 1. This figure depicts the initial extent and beginning concentrations of MTBE for his Analysis 1 simulation. The **only** locations on the map for which there are empirical data are the actual well locations. There is no data to confirm that there is any MTBE in groundwater between these points. *Gerson Decl.*, Ex. B at 1027:10-1030:24 For example, the service stations denoted S6-005 and S6-022 on Figure 3 are nearly a mile apart. *See Gerson Decl.*, Ex. G (Feb. 6, 2009 Report, fig. 3, with added distance notation). There are no monitoring wells in that 1 mile expanse to confirm there is any MTBE present in that groundwater. *Gerson Decl.*, Ex. B at 1026:17-1027:7. Terry's depiction of MTBE on Figure 3 is nothing more than rank speculation.

This Court has recognized that "the cumulative effect of methodological flaws" may warrant exclusion. *Louis Vuitton Malletier*, 525 F. Supp. 2d at 574. Terry's methodology utilized a single data point – an outlier no less – to represent conditions at an entire site and then to extrapolate those conditions into the wider aquifer, sometimes for more than a mile. Terry lacks "good grounds" for any opinions stemming from this flawed methodology. *Amorgianos*, 303 F.3d at 267.

B. Terry Literally Made Up the Majority of Inputs for Analysis 2.

Mr. Terry's Analysis 2, although fully independent of Analysis 1, is equally and fatally flawed. A "rigorous examination" of the "facts" relied on here reveals quite clearly that no such facts exist. That is to say, Analysis 2 is based on data inputs which are pure speculation and, on

that basis alone, is inadmissible. *See, e.g.*, *Daubert*, 509 U.S. at 590 (scientific knowledge "connotes more than subjective belief or unsupported speculation."); *Boucher v. U.S. Suzuki Motor Corp.*, 73 F.3d 18, 21 (2d Cir. 1996) ("expert testimony should be excluded if it is speculative or conjectural"); *Celebrity Cruises, Inc. v. Fantasia Cruising, Inc.*, 434 F. Supp. 2d 169, 178 (S.D.N.Y. 2006) (where expert could provide "no facts" to support his "suspicion" regarding causation, opinion excluded as speculative).

In Analysis 2, Terry attempts to project future MTBE concentrations in the Station 6 wells by inputting MTBE data from "known" gasoline spills at services stations in the area. The characterization of these spills as "known" rings hollow considering the amount of guesswork that went into Analysis 2. In fact, each and every one of Plaintiff's experts has bemoaned the point – there simply are not insufficient facts to draw reliable conclusions about the amount (or timing) of MTBE discharged at most service stations. *See, e.g.*, *Gerson Decl.*, Ex. H (*Deposition of Marcel Moreau* (Apr. 9, 2009)), at 515:18-22 ("Based on the information that we had at hand, were not able to arrive at a volume for the amount of product that may have been released from this site."); *id.* at 516:19-21 ("the exact timing of the release I don't believe can be established with the information that we have at hand."); *Gerson Decl.*, Ex. I (*Expert Report of Donald K. Cohen & Marnie A. Bell* (Feb. 7, 2009)), § 3.2.3 ("the exact timing and extent of a release can only be said to have occurred sometime before the report was filed, presenting another limitation to the evaluation of its impact.").

Undeterred by this lack of evidence, Terry resorted to, literally, making it up. Specifically, Terry has made a series of speculative assumptions about the timing of alleged service station releases; the volume of alleged releases; the percentage of MTBE contained in these alleged releases; and the penultimate conclusion that any MTBE which was released

actually reached groundwater (the final conclusion – based on this mountain of speculation – being Terry's unreliable opinion that MTBE will reach the Station 6 wells at detectable levels and remain there for decades to come). These assumptions are not reasonable or reliable – they simply are speculation piled on speculation.

Terry Assumed Timing: For purposes of Analysis 2, Terry needed to know the date of each release he included in his model. At minimum, Terry relies on this year to determine the percentage of MTBE content in the allegedly released product. *See Gerson Decl.*, Ex. C at 9, tbl. 1 ("The MTBE mass for [unknown] spill volumes was calculated based on the reported average percentage of MTBE typically present in gasoline sold in New York State **on the spill date** (as summarized in Table 1)." (emphasis added)); *see also infra* (discussing assumptions as to MTBE content). However, Terry did not actually know, and did not even attempt to estimate, the actual release date. *See Gerson Decl.*, Ex. J (*Deposition of David B. Terry*, Apr. 7, 2009) at 725:12-17. Indeed, as Terry explained: "[o]ne of the simplifying aspects of this [analysis] is that we assigned the spill date to . . . the spill report date. That is a simplifying assumption that we made." *Id.* at 725:17-21. In short: Terry used the date that a spill report was made to NYSDEC as the operative date for purposes of his simulation.

A "simplifying assumption" is one thing, an unreasonable and speculative assumption is quite another. Just moments before at this deposition, Terry testified that "typically the spill numbers . . . are entered at a date after the spill occurs." *Id.* at 724:6-8; *see also Gerson Decl.*, Ex. B at 846:17-20 ("[T]he discharge that caused that contamination occurred prior to that day that you discovered it. That's fair to say."). In other words, despite knowledge that a spill reported in year X, typically occurred prior to that time, Terry bases his decision as to MTBE content on that "simplifying assumption." This assumption directly affects the reliability of

Terry's conclusions. For example, Terry assigned an MTBE content of 11.9 % to all spills reported in 1992. *See Gerson Decl.*, Ex. C at tbl. 1. However, it is quite possible, as Terry has acknowledged, that any spill reported in 1992 actually occurred in 1991 or earlier – *i.e.*, in a year when MTBE content was **much** lower (2.0%). As depicted in Terry's Table 1, there is a six fold increase in the amount of MTBE released in a pre-1992 spill versus a post-1992 spill. *Id.* The implications of speculating as to the year of releases have implications that will be discussed further below.

Terry Assumed Volume: Also required for Analysis 2 was a spill volume for each release. *See Gerson Decl.*, Ex. C at tbl. 4. Lacking the actual facts to determine the volume of product released, Terry simply inserted a hypothetical release of 2,000 gallons for 49 of the 55 spills modeled. *See Gerson Decl.*, Ex. A at tbl. 2; *see also Gerson Decl.*, Ex. B at 793:16-21 (although Terry also modeled hypothetical 50-gallon and 500-gallon releases, he testified, and can be expected to tell a jury, "that the most likely of the scenarios that we developed in analysis 2 is the 2,000-gallon release scenario"). Terry was asked to provide the factual basis for his assumption:

> Q: With respect to the release that occurred in 1990 of 2,000 gallons at the station at 162-35 North Conduit Avenue resulting in 110.20 kilograms of MTBE in groundwater in the model, is that also a hypothetical release?
>
> A: Yes, it is.
>
> ...
>
> Q: With respect to the release, the actual volume released, is there any evidence for any of the service station that you have identified in Table 4 that there was actually a release of the specific volume that you've identified in the given year which you've specified for each site?
>
> A: No.

Gerson Decl., Ex. D at 266:4-10; 266:24-267:9. Plaintiff's expert, Marcel Moreau, was retained

to determine the "origin, magnitude, and duration of releases of petroleum" from the stations identified. *Gerson Decl.*, Ex. K (*Expert Site Specific Report of Marcel Moreau*, Feb. 6, 2009) at 3. At his deposition, Moreau was repeatedly asked if he could state with any certainty whether a spill or leak of 2000 gallons occurred at the stations identified by Terry. He consistently answered that "[W]ith the information at hand, it's not possible to offer an opinion whether or not a release of 2000 gallons or any amount of gallons occurred at this particular site" or words to that effect. *Gerson Decl.*, Ex. H at 444:4-18; *see also id.* at 414-15, 441-42, 447-48, 474-75, 478-79, 491-92, 511-12, 515-16, 518-20, 528-29. Ultimately, Moreau conceded that one could not arrive at a "defensible estimate" of how much gasoline with MTBE may have been released at these service stations. *Id.* at 543:4-24. In other words, Plaintiff's own expert – who was specifically retained to estimate the volume of gasoline released at each station – has stated unequivocally that neither 2,000 gallons (nor any specific volume) is "defensible" given the information available. Terry's selection of a 2,000 gallon spill and his simulations of the impact of such releases is without any "defensible" factual support. Lacking such evidence, Terry had no reasonable basis to presume 2,000 gallons of gasoline had been released at these sites, not merely once, but each time a spill report was made to the NYSDEC.

Terry Assumed MTBE Content to Calculate Mass: To run his model, Terry required a mass of MTBE to be loaded into his model domain. *See Gerson Decl.*, Ex. C at 6. However, "the quantum of the mass [was] unknown." *Gerson Decl.*, Ex. B at 794:11-12; *see also id.* at 794:24-795:2 ("[W]e can't statistically bound that [the precision of the quantum of mass estimate] because we don't have the data that would allow us to do that."). What was known was that "the amount of MTBE present in gasoline in New York has varied over time...." *Gerson Decl.*, Ex. C at 4. Therefore, Terry calculated the quantum of MTBE mass for each

hypothetical spill volume "based on the reported average percentage of MTBE typically present in gasoline sold in New York State on the spill date (as summarized in Table 1)." *Id.* at 9.

Again, assumptions are one thing, speculation is quite another, and Terry had no reliable basis for the percentages he assumed in Table 1. For example, for each year between 1992 and 2007, Terry relied on a single resource – an EPA Website entitled "RFG Property and Performance Averages for **Poughkeepsie, NY**." *See Gerson Decl.*, Ex. C at tbl. 1 (emphasis added) (*available at* http://www.epa.gov/oms/regs/fuels/rfg/properf/pksie-ny.htm). Not only does this source provide information only for a localized area 80 miles north of Queens, it **does not include information for the years 1986 through 1994**. *Id.* Where Terry obtained the averages for those years is anyone's guess. It certainly was not the case that he had personal knowledge of the values in Table 1:

> Q: With respect to the spill that occurred in 1990, do you have any information to indicate that the spill which was the subject of the spill report at 84-02 Parsons Boulevard in 1990 contained MTBE?
>
> A: Well, all we know is that typical MTBE expected in gasoline at that time, but we don't have specific site information.
>
> Q: And with respect to the typical amount, the typical amount in 1990 is what, according to the sources you looked at?
>
> A: Well, we're assigning the value 2%.
>
> Q: And the 2% is based on the EPA reports which have no field measurements of gasoline being distributed in Queens; correct?
>
> A: It is based on the EPA report, that's true.
>
> Q: With no field measurements of gasoline?
>
> A: I don't believe there are field measurements to support it.
>
> ...
>
> Q: **Did you understand that certain grades of gasoline distributed in New York prior to 1992 did not contain MTBE?**
>
> ...

A: **Certainly, yes.**

Gerson Decl., Ex. D at 260:7-261:15, 262:4-8 (emphasis added). Terry's seriously flawed assumptions about MTBE content affect the reliability of his final conclusion by **directly** influencing the mass of MTBE "loaded" into the model domain. Still, this is not end of Terry's assumptions.

Terry Assumed That MTBE Mass Reached Groundwater: This Court has noted that the relevant risk of harm is the "contamination of **groundwater**." *City of New York v. Amerada Hess Corp. (In re MTBE Prods. Liab. Litig.)*, No. 04-CV-3417, slip op. (S.D.N.Y. June 9, 2009), at * 23 n. 63 (emphasis added). In other words, even assuming that a service station leak occurred within the capture zone of a particular Station 6 well, there is no risk of harm until MTBE is actually in groundwater – *i.e.*, a surface spill or soil contamination does not suffice. In his Analysis 2 simulation, Terry assumes that the hypothetical mass calculated from each and every alleged release listed on Table 4 has actually reached groundwater. *Gerson Decl.*, Ex. J at 725:1-3 ("[W]hat our modeling did was assume it [MTBE] is entering the groundwater beginning in that time [of discovery]"); *see also id.* 727:23-728:4 ("[MTBE] starts to enter groundwater on that date, that's true."). But Terry admits that he had no factual or evidentiary basis for this assumption:

Q: With respect to the mass projected as being present in groundwater for each of the sites identified in Table No. 4, is there site-specific data to confirm that there actually was that mass of MTBE in that year beneath that location?

A: No, there is not.

Gerson Decl., Ex. D at 267:10-17.

In summary, to complete his analysis Terry had to assume (1) a spill date for each alleged release of gasoline; (2) a volume of gasoline for each alleged spill or leak; (3) a percentage of

MTBE content in the hypothetically released volume of gasoline (to calculate a hypothetical mass); and (4) a hypothetical mass of MTBE actually reaching groundwater. The Second Circuit has held that "any step that renders the analysis unreliable under the *Daubert* factors renders the expert's testimony inadmissible." *Amorgianos*, 303 F.3d at 267. Individually, each of these assumptions throws doubt on the ultimate conclusions generated by Terry's modeling. Taken together, no reasonable juror could find that it is more likely than not that MTBE will be detected in the Station 6 wells at detectable levels sometime in the future.

III. TERRY DOES NOT HAVE THE EXPERIENCE TO RELIABLY PREDICT FUTURE MTBE CONCENTRATIONS, A FAILING BETRAYED BY HIS OWN MODELING.

To the extent Terry relies on his experience to support his opinions, there is little upon which he can base his speculative and subjective conjecture. Terry admits that he has no experience investigating service stations in Queens or elsewhere in Long Island. *Gerson Decl.*, Ex. D at 65:18-23. Terry has never studied MTBE plumes in groundwater to calculate the "first order decay rate" which governs the movement of a contaminant in an aquifer. *Id.* at 193:20-23. Nor has he ever published any peer reviewed articles on the fate and transport of MTBE in groundwater and, in fact, Terry disclaimed even having read many of the peer-reviewed authors who have published articles on this topic. *Id.* at 198:9-199:6.

Prior to his work in this case, Mr. Terry had never personally run the ATRANS or MT3D models, nor the Groundwater Vistas program, for the purpose of analyzing the fate and transport of MTBE. *See id.* at 144:11-16; 147-9-13; 147:24-148:3. In fact, he had never performed any groundwater transport analysis of MTBE in the Upper Glacial Aquifer of Long Island (*id.* at 153:22-154:3); had never published a peer-reviewed article in any scientific or technical journal regarding the fate and transport modeling of MTBE using the MT3D model (*id.* at 191:18-24);

and had never used **any** numerical model (like that used here) to predict the impact of MTBE on a public water supply well. *Id.* at 164:9-14.

In short, while Mr. Terry may be a hydrogeologist and modeler, he has little experience analyzing or modeling the fate and transport of the chemical at issue in this case: MTBE. His professional experience provides little or no support for his work and opinions in this case.

IV. THE CUMULATIVE EFFECT OF TERRY'S METHODOLOGICAL FLAWS SO DIMINISHES THE PROBATIVE VALUE OF HIS MODELING AND OPINIONS AS TO WARRANT THEIR EXCLUSION UNDER RULE 403.

In addition to meeting the requirements of Rules 702 and 703, Terry's testimony is "subject, of course, to Rule 403's more general prohibition against evidence that is less probative than prejudicial or confusing." *Schering Corp. v. Pfizer Inc.*, 189 F.3d 218, 228 (2d Cir. 1999). An expert's methodology may be "so flawed as to be completely unhelpful to the trier of fact," and "the cumulative effect of the methodological flaws [may] so diminish[] the reliability and probative value [of the evidence] that its exclusion is warranted under *Rules 403* and *702*." *Louis Vuitton Malletier v. Dooney & Bourke, Inc.*, 525 F. Supp. 2d 558, 562-63, 574 (S.D.N.Y. 2007) (internal quotations and citations omitted); *see also Renaud v. Martin Marietta Corp.*, 749 F. Supp. 1545, 1552 (D. Colo. 1990) (Weinshienk, J.) (use of single data point to draw scientific conclusions constitutes a flaw that "raises the legal issue of whether any weight whatsoever may be accorded the opinion."); *In re Agent Orange Prod. Liab. Litig.*, 611 F. Supp. 1267, 1283 (E.D.N.Y. 1985) ("[t]he unfounded assumptions and speculation underlying [the expert's] testimony reduce[d] its probative value to a point approaching zero.").

Terry proposes to tell the jury that MTBE will be present in the Station 6 wells at more than 20 ppb, 31 years in the future. *Gerson Decl.*, Ex. C at 11 (discussion Analysis 1). His opinions are based on modeling known to be unreliable and inaccurate, and driven by inputs that

are both insufficiently representative of reality (Analysis 1) or speculative and unsupported by any evidence (Analysis 2). The cumulative effect of all of these flaws so diminishes the probative value of Terry's opinions as to make his modeling totally unhelpful to the jury's determination of future MTBE impacts to the Station 6 wells. Yet, because his predictions will be the result of **computer modeling** there is risk of a "false aura of scientific infallibility." *See In re Agent Orange.*, 611 F. Supp. at 1283; *see also City of New York v. Pullman Inc.*, 662 F.2d 910, 915 (2d Cir. 1981) (excluding government report under Rule 403 where "aura of special reliability and trustworthiness which would not have been commensurate with its actual reliability."). Considering that Terry's modeling is highly suspect for all the reasons detailed above, the risks of prejudice, confusion of the issues, and (perhaps most importantly) misleading the jury, warrant exclusion of Terry's modeling and any opinions or testimony he might proffer from that modeling.

CONCLUSION

For the foregoing reasons, Defendant ExxonMobil respectfully requests that the fate and transport modeling performed by Terry be excluded from trial, and that Terry be precluded from providing any testimony about alleged future MTBE detections at the Station 6 wells.

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